

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION  
(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C.20231  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing:  17 August 2000 (17.08.00)	
International application No.:  PCT/IT99/00358	Applicant's or agent's file reference:
International filing date:  09 November 1999 (09.11.99)	Priority date:  12 February 1999 (12.02.99)
Applicant:  TALMON, Emilio	

1. The designated Office is hereby notified of its election made:

in the demand filed with the International preliminary Examining Authority on:  
  
15 June 2000 (15.06.00)

in a notice effecting later election filed with the International Bureau on:  
  
\_\_\_\_\_

2. The election  was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	Authorized officer:  J. Zahra Telephone No.: (41-22) 338.83.38
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CLAIMS

1. Lid (30) applied by pressure to a can (10) containing drinks (28),  
said can having a cylindrical body (11) and truncated cone-shaped mouth (12) at the top closed by a head (15) with a raised  
5 rim (16) and an aperture (23) obtainable by tearing off a tongue-shaped strip (19),  
characterized in that it presents a concave base, a truncated cone-shaped body (33) and a cylindrical mouth (32) whose shape and internal dimensions correspond to the shape and external dimensions of the top of the can (10), substantially permitting reciprocal matching between the truncated cone-shaped body and cylindrical mouth respectively with the truncated cone-shaped mouth (12) and cylindrical body (11) of the can (10).
- 10 2. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
claim 1,  
characterized in that the concave base presents an external raised rim (34) of a substantially U-shaped cross section, that matches with the raised rim (16) on the head (15) of the can (10), height of the internal wall of the rim (34) on the lid (30) being substantially  
15 that of the raised rim (16) on the head (15) of the can (10), the cylindrical mouth (32) in the lid (30) extending to match, for a few millimetres, with the cylindrical body (11) of the can (10).
- 20 3. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
claim 1,  
characterized in that on its concave base there is a protrusion (45) substantially of the same shape as the aperture (23) in the opened can (10) but slightly larger so that, on applying the lid (30) to the can (10), the position of the protrusion (45) corresponds radially to that of the aperture (23) and when said protrusion  
25 (45) is forced inside said aperture (23) it acts as a stopper hermetically closing the can (11) avoiding accidental spillage of the
- 30

drink (28) if not fully consumed, as well as making it possible to consume it as desired, removing the lid (30) from the can each time.

4. Lid (30) applied by pressure to a can (10) for drinks (28) as in

5 claim 1,

characterized in that, at the beginning and end of its truncated cone-shaped body (33), it presents two annular ribs (48, 49) to make a seal, said ribs matching with the beginning and end of the truncated cone-shaped mouth (12) of the can (10).

10 5. Lid (30) applied by pressure to a can (10) for drinks (28) as in

claims 1[and 4]

characterized in that it presents two vent holes, one (46) placed substantially at the centre of its concave base (31) and the other (47) between the two annular ribs (48, 49) on its truncated cone-

15 shaped body (33).

6. Lid (30) applied by pressure to a can (10) for drinks (28) as in

claim 1,

characterized in that, substantially at the meeting point between its

truncated cone-shaped body (33) and cylindrical mouth (32), is an

20 external handle (40), facing upwards and adhering to said body prior to use, said handle (40) being easily rotated outwards to assist the pull on the lid (30) in order to detach it from the can (10).

7. Lid (30) applied by pressure to a can (10) for drinks (28) as in

claims 1[and 6,]

25 characterized in that it presents, about halfway up said handle (40) two lateral notches (43) and a transversal dimension so that, by making a slight longitudinal bend, it is able to enter the aperture (23) in the can (10), after all the drink (28) has been consumed, becoming inserted in said notches (43) in the edge of said aperture

30 (23), thus fixing the can (10) and lid (30) together, preventing their coming apart and the lid (30) forming an item of waste to pollute the

environment.

8. Lid (30) applied by pressure to a can (10) for drinks (28) as in claim 1,  
characterized in that its height is comprised between 8 and 25 mm.
- 5 9. Lid (30) applied by pressure to a can (10) for drinks (28) as in claim 1,  
characterized in that it is made in a single piece.
10. Lid (30) applied by pressure to a can (10) for drinks (28) as in claim 1,  
characterized in that it is made of plastic material.  
characterized in that it is made of moderately elastic plastic material.
11. Lid (30) applied by pressure to a can (10) for drinks (28) as in claim 1,
12. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
15 claim 1,  
characterized in that it is made of rubber.

## INTERNATIONAL COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No.	International filing date (day/month/year)	(Earliest) Priority Date (day/month/year)
PCT/IT 99/00358	09/11/1999	12/02/1999
Applicant		
TALMON, Emilio		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing :
  - contained in the international application in written form.
  - filed together with the international application in computer readable form.
  - furnished subsequently to this Authority in written form.
  - furnished subsequently to this Authority in computer readable form.
  - the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
  - the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2.  Certain claims were found unsearchable (See Box I).

3.  Unity of invention is lacking (see Box II).

4. With regard to the title,

- the text is approved as submitted by the applicant.
- the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- the text is approved as submitted by the applicant.
- the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

- as suggested by the applicant.
- because the applicant failed to suggest a figure.
- because this figure better characterizes the invention.

4

- None of the figures.

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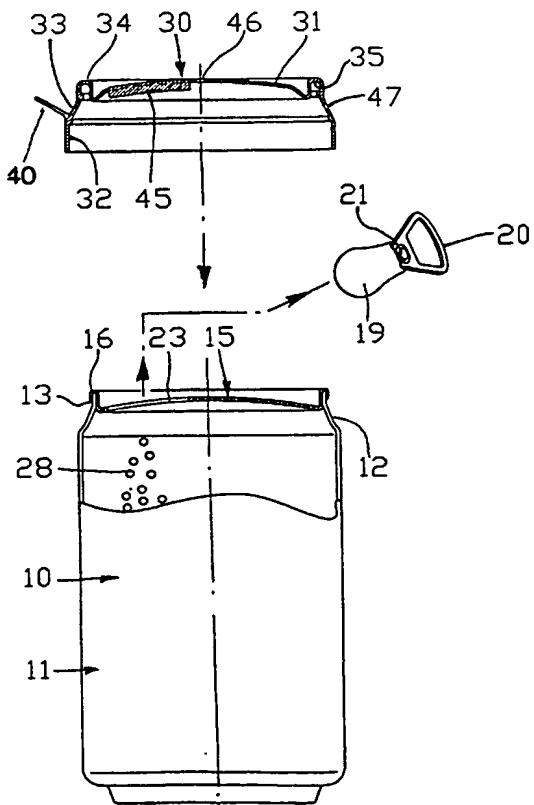
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>7</sup> : <b>B65D 51/00</b>	A1	(11) International Publication Number: <b>WO 00/47486</b> (43) International Publication Date: 17 August 2000 (17.08.00)
(21) International Application Number: <b>PCT/IT99/00358</b>		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
(22) International Filing Date: 9 November 1999 (09.11.99)		
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(71)(72) Applicant and Inventor: TALMON, Emilio [IT/IT]; Via Pareda, 70, I-38032 Canazei (IT).		Published <i>With international search report.</i>
(74) Agent: DIGIOVANNI, Italo; Brevetti Dott. Ing. Digiovanni Schmiedt S.r.l., Via Aldrovandi, 7, I-20129 Milano (IT).		

(54) Title: LID APPLIED BY PRESSURE TO CANS CONTAINING DRINKS

(57) Abstract

Lid (30) of plastic material, applied by pressure, having a lateral handle (40), purpose of said lid being to protect the top of the can (10) for drinks (28) against pollution, an opening (23) being made by a tear-off tongue (19), said lid matching substantially with the top of the can, its internal facing having on it a protruberance that, acting as a stopper (45), hermetically closes the aperture (23) in the can (10) when opened, thus avoiding accidental spillage of the drink (28) remaining in the can.



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**Lid applied by pressure to cans containing drinks**

The invention concerns packaging of drinks in cans.

Cans containing drinks that can be drunk through an aperture made in the top surface of the can are in everyday use, the aperture being created by pulling off a strip prepared for the purpose, and by application of a ring fixed by a pin at the rear end of said strip, which ring, before being pulled up, lies flat on said top surface of the can.

The serious drawback connected with these cans is that there is nothing to protect the surface from dirt liable to accumulate during storage and transport.

Further, once open, there is no real way of closing the can which may mean loss or, in any case deterioration, of any liquid not immediately drunk after opening the can.

The invention here described solves both these problems, that of dirt accumulating on the top surface and that of preserving the quality of the drink to be consumed later, as will now be explained.

Subject of the invention is a lid applied by pressure to a can for drinks having a cylindrical body and truncated cone-shaped mouth at the closed top of a head round which is a raised edge, and an aperture which can be formed by pulling off a tongue-shaped strip

The shape and internal dimensions of said lid correspond to the

shape and external dimensions of the top of the can to allow substantially reciprocal matching between the lid's truncated cone-shaped body and cylindrical mouth and the truncated cone-shaped mouth and cylindrical body of the can.

- 5 The base of said lid is concave presenting an external raised rim of a substantially U-shaped cross section, said rim matching with the raised edge round the upper surface of the can.

The height of the internal wall of the rim round the lid is substantially the same as that of the raised edge on the upper surface of the  
10 can.

The cylindrical mouth in the lid extends to match, for a few millimetres, with the cylindrical body of the can.

There is a protruberance on the base of the lid, shaped substantially like the aperture in the opened can, and slightly larger

- 15 On applying the lid to the can so that the position of the protruberance corresponds radially to said aperture, said protruberance can therefore be pressed down inside the aperture, like a stopper, closing the can hermetically, avoiding any spillage of liquid, if not entirely drunk, and keeping the remainder unaltered for later  
20 consumption by simply removing the lid each time.

At the beginning and end of the truncated cone-shaped body of the lid are two annular sealing ribs that match with the beginning and end of the lid's truncated cone-shaped mouth.

- 25 Two vent holes (46, 47) are made in the lid substantially in the centre of its concave base and at the position of its truncated cone-shaped body between the two annular ribs.

A handle is situated on the outside of the lid, substantially at the meeting point between its truncated cone-shaped body and the cylindrical mouth; before use, this handle faces towards the top of  
30 the lid, lying flat against said lid's body, from where it can be easily rotated outwards for pulling the lid to detach it from the can.

Two lateral notches are cut into the handle about halfway along it, the transversal size of the handle being such that, when slightly bent longitudinally, it enters the aperture in the can, after all its contents have been drunk, until the edge of the aperture enters the

- 5 notches fixing can and lid together to prevent them from falling apart and polluting the environment.

In one type of execution lid height is between 8 and 25 mm.

The lid is preferably made in one piece and of moderately elastic material which may be plastic, rubber or some equivalent.

- 10 The invention offers evident advantages.

The top of the can is protected against pollution by means of a light and practically bulkless lid of negligible cost, the aperture for consumption of the drink being made in the top of the can by pulling off the tongue-shaped strip.

- 15 As the top of the can has a practically hermetic seal, the lid prevents pollution through accumulation of dirt and dust which, on opening the can, could fall into the drink making it unhealthy.

The presence of the lateral handle makes lifting the lid off in order to reach the contents an extremely simple and natural gesture.

- 20 As the lid can be put on again each time a drink is taken, any quantity left in the can is safe from pollution and its original high quality is fully maintained.

To sum up these advantages, a simple means of negligible cost not only protects the drink against pollution but also ensures that its 25 full flavour and other characteristics remain unimpaired.

Characteristics and purposes of the disclosure will be made still clearer by the following examples of its execution illustrated by diagrammatically drawn figures.

- Fig. 1 A can to be opened by pulling off a tongue-shaped strip, seen closed, with the lid on, perspective view.

Fig. 2 As above, a longitudinal section.

- Fig. 3 The can without lid, seen from above.
- Fig. 4 A can being opened by pulling off the tongue, when the lid is being pressed on.
- Fig. 5 Longitudinal section of the lid, with detail.
- 5 Fig. 6 The lid seen from inside.
- Fig. 7 The can when open, with the lid on, longitudinal section.
- Fig. 8 As in Fig 7, seen from above.
- Fig. 9 The can open, with the handle of the lid fitted into the aperture, after emptying.
- 10 The can 10, of a well-known type, comprises the body 11 with (Figs 2, 4) the truncated cone-shaped mouth 12 and cylindrical rim 13. This mouth is closed by the head 15 with U-shaped edge 16. On the convex body of the head a tongue-shaped strip 19 is made by a prepared tear-off surround 22, to the end of which a pin 21 fixes the trapezoidal ring-shaped handle 20.
- 15 The shape of the protective lid 30, of plastic material is substantially that of the top of the can, and comprises a cylindrical mouth 32 that connects, by means of the truncated cone-shaped body 33, with a convex base 31 through the raised U-shaped edge 34 whose internal channel 35 fits over the rim 16 of the can.
- 20 On the base 31 of the lid, at a position radially corresponding to that of the aperture 23 created in the head 15 by pulling off the tongue 19, there is a protruberance 45 whose shape corresponds to that of said aperture 23, so that on fitting the lid over the opened can
- 25 (figures 7, 8) said protruberance acts as a stopper (see also Fig.9). It is clear from the foregoing that the lid 30 (Figs. 1 and 2) provides a hygienic protection to the top of the can 10, preventing the accumulation of dirt thereon during storage and transport.
- Protection is also ensured by the fact that, as clearly seen in
- 30 Figures 5 and 7, there are two annular ribs on the lid, 48 and 49, placed respectively between the cylindrical mouth 32 and the

truncated cone-shaped body 33 that connect with the base 31 and adhere to the can 10 at the position of its truncated cone-shaped mouth 12.

These annular ribs create what is substantially a hermetic chamber  
5 comprising two vent holes, hole 46 at the centre of the base 31 of the lid, and hole 47 on the truncated cone-shaped body 33.

To detach the lid 30 from the can when about to be opened, a handle 40 is fixed to said lid 30 at the point between the truncated cone-shaped body 33 and the cylindrical mouth 32, said handle  
10 having in it (Figs 1, 8) a central aperture 41 and notches 43 in the edges of its sides 42.

To facilitate pulling the handle which, prior to use, lies flat against the truncated cone-shaped body 33 of the lid, said handle can be rotated outwards as shown in Figures 4, 7, 8.

15 If the drink has not been finished, the remaining quantity 28 can be protected by pressing the lid back on as seen in Figures 4, 7 and 8. The lid adheres closely to the top of the can both on account of its shape and because of the presence of the ribs 48, 49.

Forced penetration of the stopper 45 inside the aperture 23 in the  
20 head 15 of the can, not only keeps the drink clean but also prevents accidental spillage until the whole quantity has been consumed.

On consuming the contents 28 of the can, after longitudinally bending the handle and forcing it inside the aperture 23 in the head of the can (Fig. 9), the edges of said aperture 23 can penetrate  
25 inside the notches 43 (Fig 9), so forming a stable connection between can and lid and preventing the latter from becoming an item of polluting waste if dropped on the ground.

As the above invention has been described and explained as one example only and to show its essential features, many variations  
30 may be made to it according to industrial, commercial and other requirements, or be included in other systems and means without

departing from its sphere of operation.

It is therefore understood that the application to patent comprises any equivalent application of the concepts therein expressed or any equivalent product executed and/or operating according to any one  
5 or more of the following claims.

CLAIMS

1. Lid (30) applied by pressure to a can (10) containing drinks (28),  
said can having a cylindrical body (11) and truncated cone-shaped mouth (12) at the top closed by a head (15) with a raised  
5 rim (16) and an aperture (23) obtainable by tearing off a tongue-shaped strip (19),  
characterized in that it presents a concave base, a truncated cone-shaped body (33) and a cylindrical mouth (32) whose shape and internal dimensions correspond to the shape and external dimensions of the top of the can (10), substantially permitting reciprocal matching between the truncated cone-shaped body and cylindrical mouth respectively with the truncated cone-shaped mouth (12) and cylindrical body (11) of the can (10).
- 10 2. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
claim 1,  
characterized in that the concave base presents an external raised rim (34) of a substantially U-shaped cross section, that matches with the raised rim (16) on the head (15) of the can (10), height of the internal wall of the rim (34) on the lid (30) being substantially  
15 that of the raised rim (16) on the head (15) of the can (10), the cylindrical mouth (32) in the lid (30) extending to match, for a few millimetres, with the cylindrical body (11) of the can (10).
- 20 3. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
claim 1,  
characterized in that on its concave base there is a protruberance (45) substantially of the same shape as the aperture (23) in the opened can (10) but slightly larger so that, on applying the lid (30) to the can (10), the position of the protruberance (45) corresponds radially to that of the aperture (23) and when said protruberance  
25 (45) is forced inside said aperture (23) it acts as a stopper hermetically closing the can (11) avoiding accidental spillage of the
- 30

drink (28) if not fully consumed, as well as making it possible to consume it as desired, removing the lid (30) from the can each time.

4. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
5 claim 1,

characterized in that, at the beginning and end of its truncated cone-shaped body (33), it presents two annular ribs (48, 49) to make a seal, said ribs matching with the beginning and end of the truncated cone-shaped mouth (12) of the can (10).

- 10 5. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
claims 1 and 4

characterized in that it presents two vent holes, one (46) placed substantially at the centre of its concave base (31) and the other (47) between the two annular ribs (48, 49) on its truncated cone-shaped body (33).

- 15 6. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
claim 1,

characterized in that, substantially at the meeting point between its truncated cone-shaped body (33) and cylindrical mouth (32), is an  
20 external handle (40), facing upwards and adhering to said body prior to use, said handle (40) being easily rotated outwards to assist the pull on the lid (30) in order to detach it from the can (10).

- 25 7. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
claims 1 and 6,

characterized in that it presents, about halfway up said handle (40)  
two lateral notches (43) and a transversal dimension so that, by  
making a slight longitudinal bend, it is able to enter the aperture  
(23) in the can (10), after all the drink (28) has been consumed,  
becoming inserted in said notches (43) in the edge of said aperture  
30 (23), thus fixing the can (10) and lid (30) together, preventing their coming apart and the lid (30) forming an item of waste to pollute the

environment.

8. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
claim 1,

characterized in that its height is comprised between 8 and 25 mm.

5 9. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
claim 1,

characterized in that it is made in a single piece.

10. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
claim 1,

10 characterized in that it is made of plastic material.

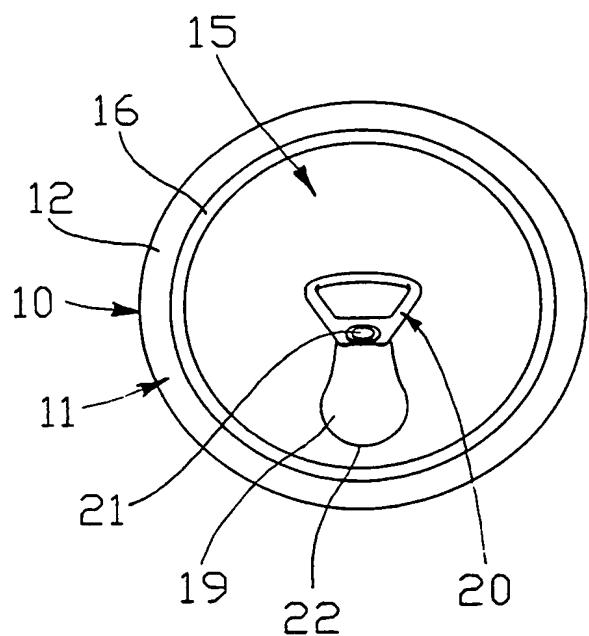
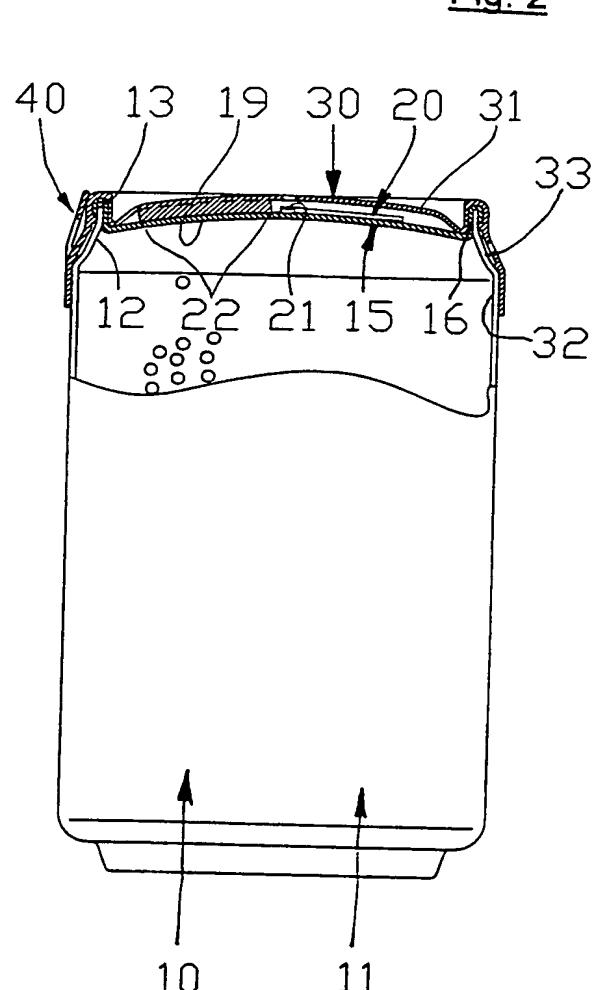
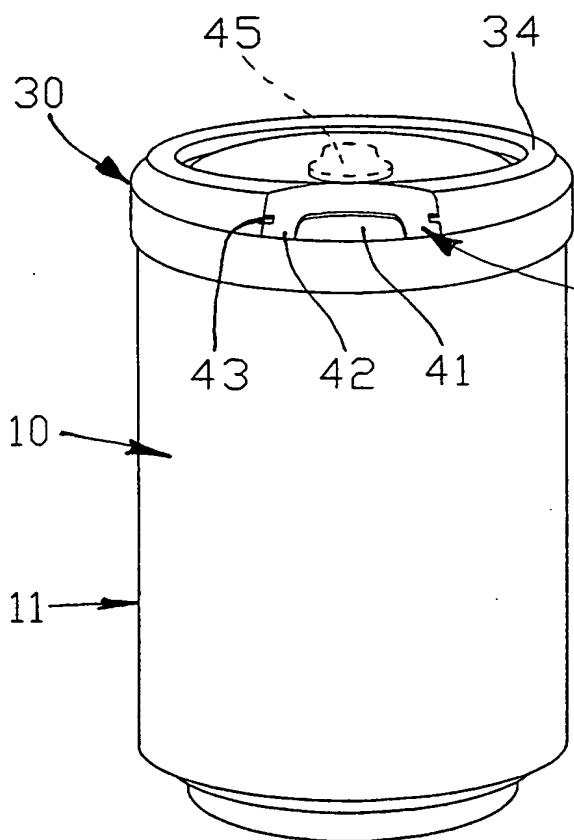
characterized in that it is made of moderately elastic plastic material.

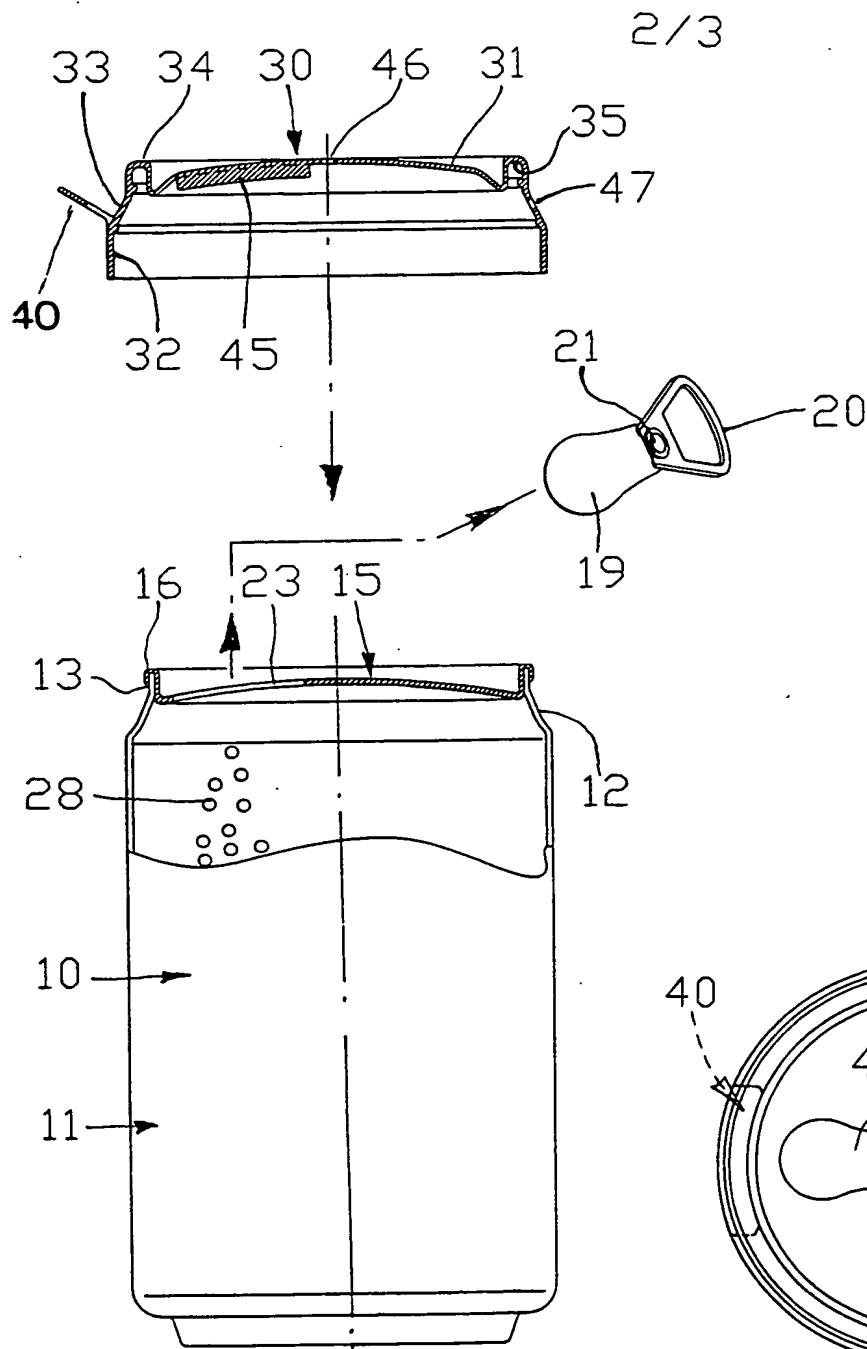
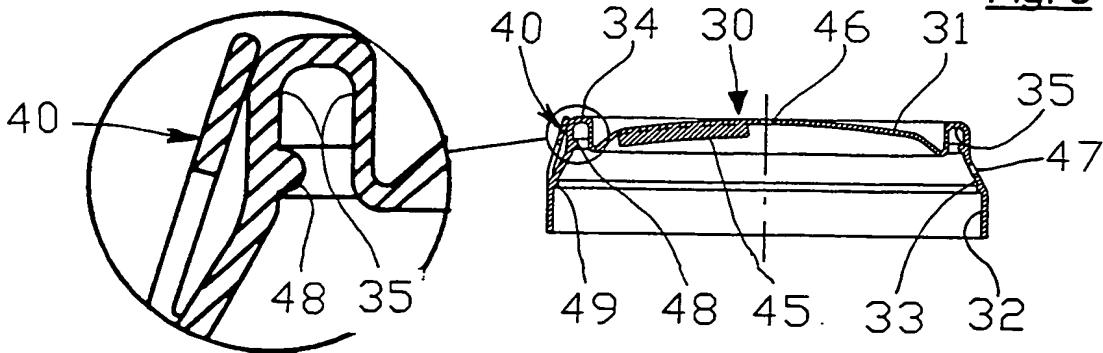
11. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
claim 1,

12. Lid (30) applied by pressure to a can (10) for drinks (28) as in  
15 claim 1,

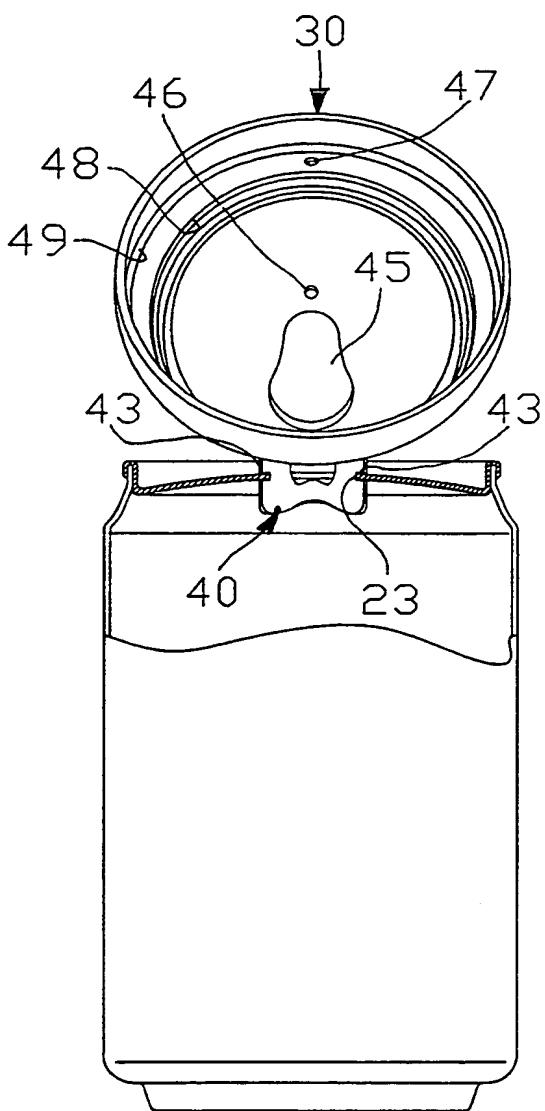
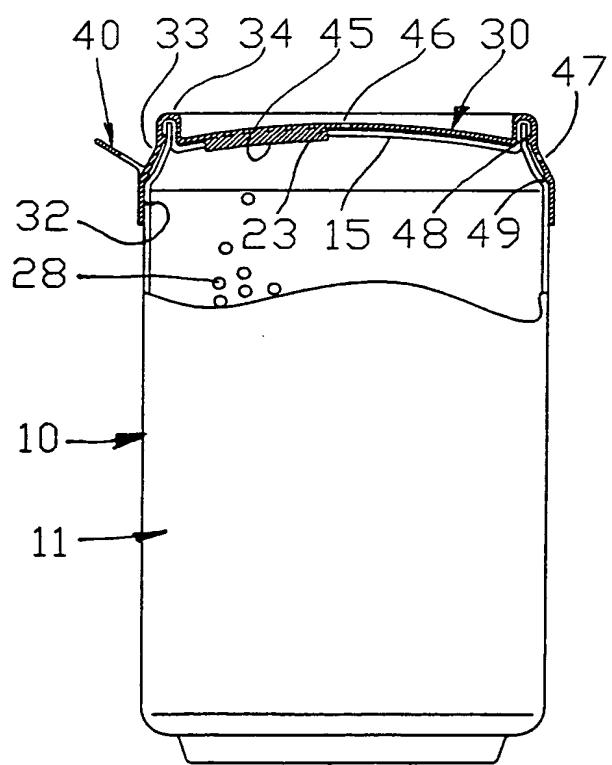
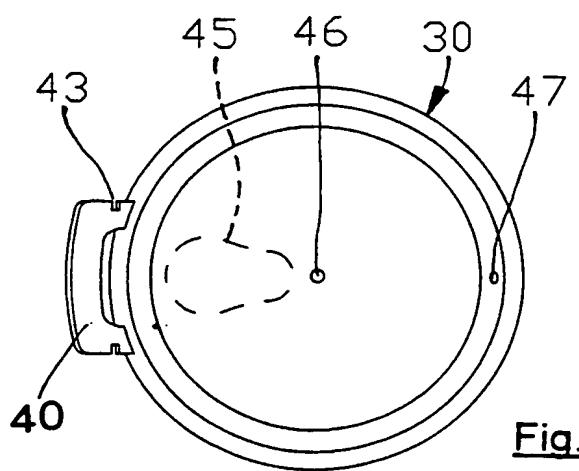
characterized in that it is made of rubber.

1/3



Fig. 4Fig. 6Fig. 5

3/3

Fig. 7Fig. 9Fig. 8

# INTERNATIONAL SEARCH REPORT

Int'l. Appl. No  
PCT/IT 99/00358

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 7 B65D51/00

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 105 964 A (HEATH) 21 April 1992 (1992-04-21)	1,2,9,10
A	column 2, line 30 -column 3, line 48; figures 1,2 ---	4
A	US 4 917 258 A (BOYD ET AL.) 17 April 1990 (1990-04-17) column 5, line 32 -column 6, line 60; figures 3,4 ---	1,2,4,6, 10,11
A	WO 98 35883 A (CAGAN) 20 August 1998 (1998-08-20) page 10, line 10 -page 11, line 9; figures 6-8 ---	3
A	US 4 715 510 A (VAN DER MEULEN ET AL.) 29 December 1987 (1987-12-29) column 4, line 9-33; figures 5,7 ---	3
	-/-	

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
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Date of the actual completion of the international search

10 February 2000

Date of mailing of the international search report

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.  
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## INTERNATIONAL SEARCH REPORT

Int'l Application No  
PCT/IT 99/00358

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 98 54058 A (BONDESANI, DOTTI) 3 December 1998 (1998-12-03) abstract; figures 1,2 ----	3
A	US 5 273 176 A (DIAZ) 28 December 1993 (1993-12-28) column 2, line 47-61; figures 4-6 ----	6
A	US 5 139 163 A (DIAZ) 18 August 1992 (1992-08-18) column 3, line 34 -column 4, line 11; figures 1-8 -----	6,10,11

# INTERNATIONAL SEARCH REPORT

Information on patent family members

Inte...inal Application No

PCT/IT 99/00358

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5105964	A	21-04-1992	NONE		
US 4917258	A	17-04-1990	NONE		
WO 9835883	A	20-08-1998	DE 19706112 A		30-04-1998
			AU 6398598 A		08-09-1998
US 4715510	A	29-12-1987	NL 8500574 A		01-10-1986
			AT 45075 T		15-08-1989
			AU 587231 B		10-08-1989
			AU 5402586 A		04-09-1986
			BE 902743 A		16-10-1985
			BR 8600889 A		11-11-1986
			CA 1266022 A		20-02-1990
			DK 85886 A		02-09-1986
			EP 0193250 A		03-09-1986
			GR 860566 A		23-05-1986
			JP 1809177 C		10-12-1993
			JP 5012223 B		17-02-1993
			JP 61273343 A		03-12-1986
			KR 9102183 B		06-04-1991
			MX 164616 B		09-09-1992
			NO 860757 A		02-09-1986
			PT 8487 U		30-10-1992
			PT 82100 A		01-03-1986
			US 4717037 A		05-01-1988
			ZA 8601448 A		29-10-1986
WO 9854058	A	03-12-1998	IT MI971260 A		30-11-1998
			IT MI972041 A		08-03-1999
			AU 8435398 A		30-12-1998
US 5273176	A	28-12-1993	NONE		
US 5139163	A	18-08-1992	NONE		